

What is claimed is:

- 1 1. An electrical connector for connecting an electrical apparatus to a high frequency
2 electrical conductor comprising:
3 a connector body having a passageway therethrough extending from a first end to a
4 second end thereof;
5 an electrically conductive signal carrying element disposed in said passageway and
6 extending between said first end of said connector body to said second end of said second end of
7 said connector body to carry a high frequency signal from said first connector end to said second
8 connector end;
9 said signal carrying element comprising a strip of flexible dielectric material having a
10 first trace and a second trace formed upon a surface of said strip of flexible dielectric material.
- 1 2. The electrical connector of claim 1, wherein said first trace is formed on one surface of
2 said strip of dielectric material and said second trace is formed on the opposite surface of said
3 strip of dielectric material.
- 1 3. The electrical connector of claim 1, wherein said first trace is formed on one surface of
2 said strip of dielectric material and said second trace is formed on the same surface of said strip
3 of dielectric material.
- 1 4. The electrical connector of claim 2 wherein the thickness of said dielectric material
2 separating said first trace and said second trace is selected to produce a predetermined impedance
3 to match the impedance of a high frequency electrical conductor connected to said signal carrying
4 element.
- 1 5. The electrical connector of claim 4 wherein said high frequency electrical conductor is a
2 coaxial cable.

1 6. The electrical connector of claim 4 wherein said first trace is a signal trace and said
2 second trace is a reference trace.

1 7. The electrical connector of claim 6 wherein said reference trace is a ground trace.

1 8. The electrical connector of claim 6 where said signal trace is a true phase of a differential
2 signal and said reference trace is a complementary phase of the differential signal.

1 9. The electrical connector of claim 2 wherein said first trace and said second trace are of
2 equal width and thickness and aligned with one another.

1 10. An electrical connector for interconnecting a plurality of high frequency signals from a
2 first end of said connector to a second end of said connector comprising:
3 a connector body of rigid dielectric material having plural passageways each extending
4 from said first connector end to said second connector end; and
5 a plurality of conductor members respectively positioned in said plurality of passageways
6 and extending between said first connector end and said second connector end;
7 each said conductor member comprising a strip of flexible dielectric material having first
8 and second conductive traces respectively extending longitudinally along; formed on opposite
9 surfaces, and separated by the thickness of said strip.

1 11. The electrical connector of claim 10 wherein said first conductive trace is a signal trace
2 and said second conductive trace is a reference trace.

1 12. The electrical connector of claim 11 wherein said connector interconnects high frequency
2 circuits and each of said conductor members is designed with the widths of said signal trace and
3 said reference trace and the thickness of the dielectric separating said signal and reference traces
4 selected to produce an impedance that matches the impedance of a high frequency circuit

5 connected thereto.

1 13. The electrical connector of claim 12 wherein said reference traces are ground traces.

1 14. The electrical connector of claim 12 wherein each said signal trace is a true phase of a
2 differential signal and each said reference trace is a complementary phase of the associated
3 differential signal.

1 15. The electrical connector of claim 12 wherein at least one of said plurality of conductor
2 members has an impedance differing from the impedance of others of said plurality of conductor
3 members to match high frequency circuits having differing impedances.